

Sequence Range: 1 to 4272

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      10      20      30      40      50      60
ATG TCC TAT GCG GCG TTC AGA GAT GGA GCG GCG ATG CAC CGA ACC CCA TAC GTT CAT
TAC AGG ATA CCG GCG AAG TGT CTA CAT GCG GCG GCG TAC GAC GGT TTT ATG CCA GTA
M S Y A P S R D V R G P M H R T Q Y V H>

      70      80      90     100     110     120
TCC CCG TAT GAC GGT CCG GGT TCG AAC CCG GCG TTC AGC ATC ATC TCT AGC AAC CAG GTT GTC
AGG GAG ATA CTG GCA GCG GCA ACC TTC GCG GCG AAG ACC TAG TAC AGC GCG TTT GTC GAC GAC
S P Y D R P G W N Y R T C I Z S G T Q L L>

     130     140     150     160     170     180
ATG CTC GAT GAG GAT GAG ATA CAC CCG GTT GTC ATC CCG GAC CCG AGC AGC GAG TCC AGC CGA
TAC GAC CTA CTC CTA CTC TAT CTG GCG GCG GAA GAC TAG GCG GTC GCG TCC TCG ACC TCG GCT
M L D E D E I E P L I I R D R R S E S R>

    190     200     210     220     230     240     250
AAC AAA GTT CTG AGA CCG ACC GTC TCT GTG CCA GTG GAG CCG CCG CCG CAC GCG GAG CAT GAA
TTG TTT GAC GAC TCT CCG TCG CAG AGA CAG GCG GCG GCG GCG GCG GCG GCG GCG GCG GCG GCG
N K L L R R T V S V P V E G R P H C E E H E>

     260     270     280     290     300     310
TAG CAC ATG GGT CCG TCC AGG AGG AAC AGT GTT CCG GCG GCG AAA CAG TAC AGC ATG GAA GCG
ATG GAG AAC CCA GCG AGC TCC TCC TCC TCA CAG GCG GCG GCG GCG GCG GCG GCG GCG GCG GCG
Y H L G R S R R X S V P G G H Q Y S M E E A>

     320     330     340     350     360     370
GCG CCG GGT CCG CCG TTC CCG CCG TCC CAA CCG GTT CTG AGC CCG AGG CTA AAA ACC TCC ATC
CGG GCG CCA GCG GCG AAG GCG GCG AGC GTT CCG AAC GAC TCC GCG GCG GCG GCG GCG GCG GCG
A P A A P P R D S O G F L S R R L K S S S T>

    380     390     400     410     420     430     440
AAA CCG ACA AAG TCA CAA CCG AAA GTT GAC CCG AGC AGC ACC TTT CCA CAG ATC CTC GGT CCG
TTT GCA TAT TTC AGT GAT GCG TTT GAA CTG GCG TCG TCG TCC AAA GGT GTC GTC GAC GCA GCG
K R T K S Q P K L D R T S S F R Q I L P P R>

     450     460     470     480     490     500
TTC CCA AGT GGT GAC CAT GAC CCG GCG GCG GTT ATG CAG ACC TTC AAG CAC TCT CAC TCC CAT
AAG GAT TCA CCA CTC GTA CTG GCG GCG GCG GAC TAC GTT TCC AAG TTC CCG AGA GTG AGG GTA
F R S A D H D R A R L H Q S F X E S H S H>

     510     520     530     540     550     560
GAG TCC CTC CCG AGT CCG ACC AGT GGT GGT GAG GCG CCG GAC CTC AAC CTC GAT GAA GAC TCC
CAC AGG GAC GAC TCA CCG TCG TCA CCA CCA CTC GCG GAC CTC GAG GTG GAC CTA GTT CTG AGG
E S L L S P S E A A E A L E L N L D E D S>

     570     580     590     600     610     620     630
ATT ATC AAC CCA GTA CAC AGC TCC AGT CTG GCG CAG GAC TTC TCC TTT GAG GTA ACA ACA TCC
TAA TAG TTC CCG CAT CTC TCG ACC TAG GAC CCG GTC CTC AAG ACC AAA CTC CAT TCT TGT ACC
I I K P V H S S I L G Q E F C F E V T T T S>

     640     650     660     670     680     690
TCT CCG ACA AAA TGT TTT GCG TCT CCG TCT GCA GAT GAA AGC GAC AAA TCG ATT GAG AAT CTA
AGA CCG TGT TTT ACA AAA CCG ACA GCG AGA GAT CCG GCG GCG GCG GCG GCG GCG GCG GCG GCG
S G T K C F A C R S A A E R D C X W I E N L>

     700     710     720     730     740     750
CAG AGC GGT GTT AAA CCG AAC AAG GAC AAC AGC CCG CCG GTA GAT AAC CTG CAG AAA CTA TCG
GTC TCC CCA CAC TTT GCG TTT CTC CAG AAC CCG GCG GCG CAT CTA TTT CAC GAC GAC TTT GAT ACC
Q R A V K D N K D N S R R V D N V L K L W>

     760     770     780     790     800     810
ATC ATA GAA GGT CCA GAG CTG CCG CCG AAC AAG CCA TAT TAC TCC GAG TTA TCG CTG GAC GAC
TAG TAT CTT CCA CCG CTC GAC CCG GCG TTC TTT GGT GAT ATA ATG ACC CTC AAT ACC CAC CTG CTG
I T F A R W L P M R K K Y Y C H L C L D D>

    820     830     840     850     860     870     880
ATC CTC TAT CCA CCG ACC ACT TCC AAG CCG CCG TCA CCG TCA GGA GAC ACT CTC TTT TGG GCG
TAC GAG ATA CCG CCG TCG TCA AAG TCC GGT GCG AGT CCG AGT CCG CTC TCA CAG AAA ACC CCG
M L Y A R T T S K P R S A S G D T V F W Q>

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Figure 1A



1770	1780	1790	1800	1810	1820	1830	1840	1850	1860	1870	1880	1890	1900																																														
ATG AGC S	CCC GGC P	AGT TCA S	CTG GAC L	TTT AAA F	GGA GCT C	CTG GAC L	ATG TAC M	ATG GTC Q	GAG GTC E	TAC ATG Y	CCA GCT D	GAT CTA D	GAG CTC E	CAC GTC Q	ACC TGG T	TCA AGT S	CGA GCT R	ACC GCT T	CTG GAC L	AGT TGC T																																							
1910	1920	1930	1940	1950	1960	1970	1980	1990	2000	2010	2020	2030	2040	2050	2060	2070	2080	2090	2100	2110	2120	2130	2140																																				
CTG GAG L	ATC TAG I	CCC GGG A	AAG TTC K	GTT CAA V	ATC TAA I	CAG GTC Q	AAC TTC N	CTG GAC L	GCC GAG A	AAC TTG N	TTT AAA F	TCC AGG S	AAG TTC K	TTT TTC F	ACC TGG T	TCA AGT S	AAG TTC K	CAC CTC E	GAC CTG Q	TAT ATA Y	GAG CTC E	2150	2160	2170	2180	2190	2200	2210	2220	2230	2240	2250	2260	2270	2280	2290	2300	2310	2320	2330	2340	2350	2360	2370	2380	2390	2400	2410	2420	2430	2440	2450	2460	2470	2480	2490	2500	2510	2520
CTG GAG L	ATC TAG I	CCC GGG A	AAG TTC K	GTT CAA V	ATC TAA I	CAG GTC Q	AAC TTC N	CTG GAC L	GCC GAG A	AAC TTG N	TTT AAA F	TCC AGG S	AAG TTC K	TTT TTC F	ACC TGG T	TCA AGT S	AAG TTC K	CAC CTC E	GAC CTG Q	TAT ATA Y	GAG CTC E	2150	2160	2170	2180	2190	2200	2210	2220	2230	2240	2250	2260	2270	2280	2290	2300	2310	2320	2330	2340	2350	2360	2370	2380	2390	2400	2410	2420	2430	2440	2450	2460	2470	2480	2490	2500	2510	2520
CTG GAG L	ATC TAG I	CCC GGG A	AAG TTC K	GTT CAA V	ATC TAA I	CAG GTC Q	AAC TTC N	CTG GAC L	GCC GAG A	AAC TTG N	TTT AAA F	TCC AGG S	AAG TTC K	TTT TTC F	ACC TGG T	TCA AGT S	AAG TTC K	CAC CTC E	GAC CTG Q	TAT ATA Y	GAG CTC E	2150	2160	2170	2180	2190	2200	2210	2220	2230	2240	2250	2260	2270	2280	2290	2300	2310	2320	2330	2340	2350	2360	2370	2380	2390	2400	2410	2420	2430	2440	2450	2460	2470	2480	2490	2500	2510	2520
CTG GAG L	ATC TAG I	CCC GGG A	AAG TTC K	GTT CAA V	ATC TAA I	CAG GTC Q	AAC TTC N	CTG GAC L	GCC GAG A	AAC TTG N	TTT AAA F	TCC AGG S	AAG TTC K	TTT TTC F	ACC TGG T	TCA AGT S	AAG TTC K	CAC CTC E	GAC CTG Q	TAT ATA Y	GAG CTC E	2150	2160	2170	2180	2190	2200	2210	2220	2230	2240	2250	2260	2270	2280	2290	2300	2310	2320	2330	2340	2350	2360	2370	2380	2390	2400	2410	2420	2430	2440	2450	2460	2470	2480	2490	2500	2510	2520
CTG GAG L	ATC TAG I	CCC GGG A	AAG TTC K	GTT CAA V	ATC TAA I	CAG GTC Q	AAC TTC N	CTG GAC L	GCC GAG A	AAC TTG N	TTT AAA F	TCC AGG S	AAG TTC K	TTT TTC F	ACC TGG T	TCA AGT S	AAG TTC K	CAC CTC E	GAC CTG Q	TAT ATA Y	GAG CTC E	2150	2160	2170	2180	2190	2200	2210	2220	2230	2240	2250	2260	2270	2280	2290	2300	2310	2320	2330	2340	2350	2360	2370	2380	2390	2400	2410	2420	2430	2440	2450	2460	2470	2480	2490	2500	2510	2520
CTG GAG L	ATC TAG I	CCC GGG A	AAG TTC K	GTT CAA V	ATC TAA I	CAG GTC Q	AAC TTC N	CTG GAC L	GCC GAG A	AAC TTG N	TTT AAA F	TCC AGG S	AAG TTC K	TTT TTC F	ACC TGG T	TCA AGT S	AAG TTC K	CAC CTC E																																									

Figure 1C

ATC AGG S	ATC TAG I	ACA TGT T	ACA CGT A	ACA GCT A	ATG TAC G	ATG TAC H	ATG TAC A	ATG TAC L	ATG TAC S	ATG TAC Q	ATG TAC M	ATG TAC C	ATG TAC G	ATG TAC V	ATG TAC P	ATG TAC AD
2710	2720	2730	2740	2750	2760	2770	2780	2790	2800	2810	2820	2830	2840	2850	2860	2870
CAG GTC Q	CAG GTC Q	CAG GTC L	CAG GTC R	CAG GTC I	CAG GTC P	CAG GTC L	CAG GTC S	CAG GTC F	CAG GTC Q	CAG GTC N	CAG GTC P	CAG GTC L	CAG GTC P	CAG GTC H	CAG GTC M	CAG GTC P
2780	2790	2800	2810	2820	2830	2840	2850	2860	2870	2880	2890	2900	2910	2920	2930	2940
GGG CCC G	GGG CCC P	GGG CCC P	GGG CCC A	GGG CCC G	GGG CCC H	GGG CCC G	GGG CCC C	GGG CCC S	GGG CCC S	GGG CCC G	GGG CCC H	GGG CCC G	GGG CCC P	GGG CCC P	GGG CCC S	GGG CCC P
2900	2910	2920	2930	2940	2950	2960	2970	2980	2990	3000	3010	3020	3030	3040	3050	3060
TAT ATA Y	AGC TCC S	AGC TCC K	AGC TCC S	AGC TCC B	AGC TCC D	AGC TCC L	AGC TCC S	AGC TCC T	AGC TCC G	AGC TCC V	AGC TCC P	AGC TCC K	AGC TCC P	AGC TCC A	AGC TCC S	AGC TCC P
3070	3080	3090	3100	3110	3120	3130	3140	3150	3160	3170	3180	3190	3200	3210	3220	3230
AGC TCC S	AGC TCC H	AGC TCC S	AGC TCC Y	AGC TCC S	AGC TCC D	AGC TCC E	AGC TCC F	AGC TCC G	AGC TCC P	AGC TCC S	AGC TCC G	AGC TCC P	AGC TCC T	AGC TCC A	AGC TCC Q	AGC TCC P
3240	3250	3260	3270	3280	3290	3300	3310	3320	3330	3340	3350	3360	3370	3380	3390	3400
AGC TCC S	AGC TCC H	AGC TCC S	AGC TCC Y	AGC TCC S	AGC TCC D	AGC TCC E	AGC TCC F	AGC TCC G	AGC TCC P	AGC TCC S	AGC TCC G	AGC TCC P	AGC TCC T	AGC TCC A	AGC TCC Q	AGC TCC P
3410	3420	3430	3440	3450	3460	3470	3480	3490	3500	3510	3520	3530	3540	3550	3560	3570
AGC TCC S	AGC TCC H	AGC TCC S	AGC TCC Y	AGC TCC S	AGC TCC D	AGC TCC E	AGC TCC F	AGC TCC G	AGC TCC P	AGC TCC S	AGC TCC G	AGC TCC P	AGC TCC T	AGC TCC A	AGC TCC Q	AGC TCC P
3580	3590	3600	3610	3620	3630	3640	3650	3660	3670	3680	3690	3700	3710	3720	3730	3740
AGC TCC S	AGC TCC H	AGC TCC S	AGC TCC Y	AGC TCC S	AGC TCC D	AGC TCC E	AGC TCC F	AGC TCC G	AGC TCC P	AGC TCC S	AGC TCC G	AGC TCC P	AGC TCC T	AGC TCC A	AGC TCC Q	AGC TCC P

Figure 1D

505470-505480

CTG GAC AGG GTC AAG GAG TAC GAG GAG GAG ATC CAC TCA CTC AAG GAA AGG GTA GAC ATG ACC  
GAC CTC TCC CAC TTC CTC ATG CTC CTC CTC TAC GTG AGT GAC TTC CTT TCC GAT CTC TAC ACC  
I D R V K E Y E E E I H S L K R R L H M S>  
3600 3610 3620 3630 3640 3650  
AAC CCG AAG CTC GAA GAG TAC GAC CCG AGG CTC CTC TCC CAG GAA CAG CAG ACC ACC AAG ATC  
TTG GCG TTC GAC CTT CTC ATG CTC CCG TCC GAC GAC ACC CTC CTC CTC TCG TCG TTC TAG  
N K K T E E Y E R R L L S Q E E Q T S K L>  
3660 3670 3680 3690 3700 3710  
CTG ATC CAG TAC CAA CCG CCG CTC GAG CAG AGG GAG AAG CCG TTC AGG CAG CAG CAG GTC GAC  
GAC TAC GTG ATC CTT CCG GCG GAC CTC CTC TCG GAG TAC TCG CTC CTC CTC CAG GTC GAC  
E H Q Y Q A K L E O S E K H L R Q Q Q Q V Z>  
3720 3730 3740 3750 3760 3770 3780  
AAG GAC TCC CAG ATC AAG AGG ATC ATT GCG AGG CTC ATG CTC CTC CAG CAG CAG CTC CCG CCG  
TTC CCG ACC CTC TAG TAC TCC TAG TAA GCG TCC GAC TAC GAC CAC CTC CTC CTC GAC CCG CCG  
K D S Q I K S I I G R L M L V E E S L R R>  
3790 3800 3810 3820 3830 3840  
GAC CAC CCG GCG ATG CCG GAG CCG CTC CCG GAA CCG AAG AAC AGG CTC CTC CAC CCG CAG AGA  
CTG CTC GCG CTC TAC CCA TAC GCG GAC GGA CTT GCG TTC TTC TCC GAC GAG CTC CGA CCG TCG  
D H P A M A E P L P E P K K R L L D A Q R>  
3850 3860 3870 3880 3890 3900  
GGC AGC TTC CCG CCG TCG CTC GAA GAA ACC CCG GTC TCA CCG TCG GCG CAC CTC CTT GGA AGG GCG  
CGG TCG AAG GCG GGA ACC CAC GTC GTC TCG GCG CAC ACT GCG ACC GCG CTC GAA CCG TCG CCG  
C S F P P W V Q Q T R V Y R W P H L G T A>  
3910 3920 3930 3940 3950 3960  
TGG CCG CCG CAC CTC CAC CCG CCG CAC CCG GCG TCG ACA TCA CAA AGA AGG GCG AGT TCC GGA  
ACC GCG GCG GTC GCG GTC GCG CCG CTC GCG CCG ACC TCG AGT GTC TCT TCG CCG TCA AGG CCG  
W P P C P H P P R P G C R S Q R T A S S G>  
3970 3980 3990 4000 4010 4020 4030  
ACA CCG CAG ACC ACT AGG CCA CTC AGG ACC ACA GAC CTC CTT CCG TGT GCA CCG TAC CCG GCG  
TGT GCG CTC TGG TGA TCG GGT GCG TCG TAG TGT CTC GAG GAA CCG ACA CCG GCG ATG GCG GCG  
T P Q T T S P P S I T D L L P C A P Y P Q>  
4040 4050 4060 4070 4080 4090  
CCA CCG AGG CTC ACA GAC CTC CTT CTC AGT GGA CCG GAC CCG GGA ACA TCA CCA ACC ACC AGG  
GCT GCG TCG CAG TGT CTC GAG GAA GCG TCA CCG GCG CTC GGA CCG TGT AGT CCG TGG TGG TCG  
P P S V T D L L P S A P D P G T S P T T R>  
4100 4110 4120 4130 4140 4150  
ACT GGA CCG CAC CAA GCG ACA GCG GGA TCG TCT CCG TTA ACC CCG CCG TCG GCG ACC CAT CTC  
TCA CCG GCA GTC CTT CCG TGT GCG CCG CCG AAC ACA GCG AAT TCG GGA GGA ACT CCG TGG TGA GAC  
T G R H O G T A G L L P S A P L T P P W G T H L>  
4160 4170 4180 4190 4200 4210 4220  
TCA ACT GGA CTC CTC CAC TCC ACC ACC GAG AGT GCG ACC CTC ACC TCG CCG CCG ACC CCA GGA  
AGT TCG GGT GAC CAG GTC AGG TCG TCG CTC TCA CCG TCG GAG TCG ACC GGA GAG TCG CCG CCG  
S T P L L H S R H E S Q T L S C P L T P G>  
4230 4240 4250 4260 4270  
CAC CAC CTA CCG CAC ACA GAC CCG TCG ACT CCG GCG TCG TAC CCG CAT CCG  
CTC CTC GAA GCG CTC TGT CTC GCG AAG TCA GAC CCG ACC ACA GCG GGA GGA GGA  
H H L P H T D P F T L G C Y P E P>

Figure 1E

Sequence Range: 1 to 4134

10	20	30	40	50	60
TAA GGC GGC GCA GCG GGA GGT GAG GGG GGT GGC GGT GAG GGT GGC GGT GGC					
ATT CCG GCG GGT GCG GCT GCG GCA GCG GCG GCA GCG GCA GCG GCA GCG GCA					
- G P P P R P R Q G A P V Q V P C P L L L P					
70	80	90	100	110	120
ACC GGC ACC GTC TCC GCG GCG GGT GGT GGT GGT GGT GGT GGT GGT GGT GGT					
TGC CCG TCG GAG AGG GCG GCG GCA GCA GCA GCA GCA GCA GCA GCA GCA GCA					
T A S L S A A A A L P A A F R C N T T W V					
130	140	150	160	170	180
GCT CGA GCA GCA ACA GTG TCC GCG GCG GCG GCG AAA CAG TAC AGC ATG GAA GCG GCG GCG GCG					
CGA GAT GGT GGT TCT CAC AGG GCG GCG GCG GCG GTT GTT GTT GTT ATG TCG TAC GGT GCG GCG GCG					
A R G G C R V S P G G K Q Y S H E A A P A A					
190	200	210	220	230	240
GCG TTC GCG GCG TCC CAA GCG TTC GTC AGC GCG AGC GCG GCG GCG GCG GCG GCG GCG					
GCG AGG GCG GCG AGC GCG GCG GCG GCG GCG GCG GCG GCG GCG GCG GCG GCG					
P F R P S G P L S R R L K S S I K R T X					
260	270	280	290	300	310
TCA CAA GCG AAA GTC GAC GCG ACC AGC AGC TTC CGA CAG ATC CTC GGT GCG TTC TTC CCA AGT GGT					
AGT GTC GCG GCG TTT GAA GTC GCG TCC TCC TCC AAA GGT GTC TAC GAC GCA GCG GCG GCG GCG					
S Q P K L C R T S S F R Q I L P R F R S A					
320	330	340	350	360	370
GAC GAT GAC GCG GCG GCG GCG ATG CAG AGC TTC AAG GAC TCT CAC TCC GAT CAG TCC GAT CAG					
CGT GTC GTC GCG GCG GCG GCG TAC GTC GTC GTC GTC GTC GTC GTC GTC GTC GTC					
D H D R A P L M Q S F K E S H S L A					
380	390	400	410	420	430
AGT GCG ACC AGT GGT GGT GAG GCG GCG GCG GCG GCG GCG GCG GCG GCG GCG					
TCA GCG TCC TCA CCA CCA CTC GCG GAC CTC GAG TCC GAC GCA GTC GTC GTC GTC GTC					
S P S D A A E A L E L N L D E D S I I K P					
450	460	470	480	490	500
GTA CAC AGC TCC ATC GTC GCG CAG CAG TTC TCC TTC GAG GTA ACA ACA TCC GCG GCG GCG GCG					
CAT GTC TCC AGG TAG GAC GCG GCG GCG GCG GCG GCG GCG GCG GCG GCG GCG GCG					
V H S S T L G Q E F C P E V T T S S Q T T X					
510	520	530	540	550	560
TCT TTC GCG TGT CCG TCT GCA GCG GAA ACC GAC AAA TCC ACT GAG AAT GTC CAG AGG GCG GTC					
ACA AAA GCG ACA GCG AGA GGT GCG GCG GCG GCG TCC CAG AAA CAG GTC GTC GTC GTC GTC					
C F A C R S A A E R U K W I E N L Q R A V					
570	580	590	600	610	620
AAA GCG AAC AAG GAC AAC AGC GCG GCG GCG GCG GCG GCG GCG GCG GCG GCG GCG					
TTC GCG TTC TTC CTC TTC TCC GCG GCG GCG GCG GCG GCG GCG GCG GCG GCG GCG					
K P N K D N S R R V D N V L K L W I I B A					
640	650	660	670	680	690
CGA GAG CTC GCG GCG AAC AAG CCA TAT TAC TCC GAG TTA TCC CTC GAC GAC ATG CTC TAC GCA					
GCT GTC GAC GCG GCG TTC TTC GGT ATA ATG AGC CTC TAT ACC GAC CTC GTC TAC GAG ATA GCT					
R E L P P K K R Y Y C E L C L D D M L Y A					
700	710	720	730	740	750
GCG ACC ACT TCC AAG GCG GCG TCA GCG TCA GGA GAC ACT GTC TTT TGG GCG GAG CAC TCC GAG					
GCG TCC TCA AGG TTC GCG GCG AGT CCG AGT CCG CCG TCA CAC AAA ACC CCG CTC CTC AAG CTC					
R T T S K P R S A S G D T V F W G E H F E					
760	770	780	790	800	810
TTT AAC AAC CTC GCT GCT GTC GCG GCG CTC GCG CTC GAT CTC TAC GGT GAC TCC GAC AAA AAG					
AAA TTC TTG GAC GCA CCA CAG GCG GCG GCG GCG GCG GCG GCG GCG GCG GCG GCG					
F H N L F A V R A L R L H L Y R D S D K X					
820	830	840	850	860	870
GCG AAG AAG GAC AAG GCA GCG TAC GTT CCG CTC CTC ACT GTT CCA CTC GCG ACC CTC GCT GCG					
GCG TTC TTC CTC GCG GCG GCG GCG GCG GCG GCG GCG GCG GCG GCG GCG GCG GCG					
R K K D K A C Y V G L V T V P V A T L A G					

Figure 2A

890			0			910			920			940								
CCC GCG N	CAC GAG H	TTC AAG F	ACA TGT T	GAG CTC E	CAC GTC Q	TGC ACC W	TAC ATG Y	CCG GGG P	GTC GAC V	ACC TGG T	CTC GAC L	CGA GCT P	ACA TGT T	CGA GCT G	AGT TCA S	GGG CCC G	TGT AGA S	GGG CCG G	GTT CCA C	
950			960			970			980			990			1000					
ATG TAC M	GGC ACG G	TGC AGC S	GGG CCC G	CCA GCT G	CGA GCT G	CGG CCC G	GGG CCC G	TCA AGT S	CGG CCC G	CGG CCC G	CGG CCC G	TCA AGT S	CGG CCC G	CGG CCC G	AAA TTT K	GGG CCC G	AAA TTT K	GGA GCT C	GGC CCG G	TGT ACA C
1010			1020			1030			1040			1050			1060					
CCG GGA P	GCT CGA A	CTC TAC V	CGG GCT R	CGG GAC L	AAG GTC K	CGG GCT A	CGT GCA R	TAC ATG Y	CGG GTC Q	ACA TGT T	ATG TAC M	AGT TCA S	ATC TAC I	CTC TAC L	CGG GCT P	ATG TAC M	GAG GCT E	CTA GAT L	TAT ATA Y	AAG ATC K
1080			1090			1100			1110			1120			1130					
GAG CTC E	TTT AAA F	CGA GCT A	GAA GCT E	TAT ATA Y	GTC GAC V	AGC TGC T	AAC TTC N	CAC GTC M	TAC ATG Y	CGG GTC R	ATG TAC M	CGG GTC L	TGT ACA C	CGG GCT A	CTC GTC V	CGG GTC F	GAG GCT E	CGG GCT P	CGG GCT A	CTC GTC L
1140			1150			1160			1170			1180			1190					
AAT TCA N	GTC CAG V	AAC TTC K	CGC TTC C	AAG TTC K	GAG GTC E	GGG GTC E	GTC GAG V	GGT GCA A	AGT TCA S	CGA GCT L	CTC GAC V	GTC GCA H	CTC TAG L	CTC TAG L	CAA GTC Q	AGC TTC S	ACA TGT I	CGC TGT G	CGC TGT G	AAG ATC K
1200			1210			1220			1230			1240			1250			1260		
GGC CGC A	AAG TTC K	CAC GTC D	TTC AAG F	CTT GAA L	TCA AGT S	GAC CTG D	ATC TAC M	CGC GTC A	ATC TAC M	TCA AGT S	CAC GTC E	GTC GCA H	GTC GTC D	CGC GCT E	CTC AAG P	ATG TAC M	GAG GTC E	CGG GCT R	GAA GTC R	CAC GTC H
1270			1280			1290			1300			1310			1320			1330		
CTC GAG L	ATA CTC I	CTC ATC P	GGC GTC E	GAG GTC E	AAC TTC K	AGC TTC K	CGC GTC T	CGC GTC A	ACT TTC K	AAA TTT K	CGC GTC A	ATA TAC I	GAA GTC E	GAG GTC E	TAT ATC Y	ATG TAC M	AGA TTC R	CTC GTC L	ATT TAA I	GGC GTC C
1330			1340			1350			1360			1370			1380			1390		
CTC GTC Q	AAA TTT K	TAC ATC Y	CTC ATC Y	AGC TTC K	GAT CTA D	CGC GTC A	ATT TTC K	CGC GTC G	CGC GTC E	TTT GTC F	ATC GTC I	CGG GTC R	CGT GTC A	CTC GTC L	TAT ATC Y	GAA GTC E	TGT TTC S	GAG GTC R	GAG GTC R	AAC TTC K
1390			1400			1410			1420			1430			1440			1450		
TGT ACA G	GAA CTT E	GTA GAT V	CAC GTC D	CGC GGG P	ATC TAG I	AAG TTC K	TTC ACC C	ACA GTC T	GGG GTC A	TTC AGG S	ATC GTC S	CGA GTC L	GCA GTC A	GAG GTC E	CGG GTC G	CGG GTC R	CTC GTC Q	CGG GTC A	AAC TTC K	CTC GTC L
1460			1470			1480			1490			1500			1510			1520		
ATG TAC M	TGC ACC C	TGT ACA C	GAG GTC E	TTC AAC G	GGG GTC L	TGC ACC C	AAG TTC K	GTC GTC V	ATC GTC V	AAC TTC K	TGT AGG S	TGT AGG S	GAT GTC H	TGC ACC C	CTC GTC V	CTC GTC F	CTC GTC Q	CGG GTC A	AGC TTC K	GAG GTC L
1520			1530			1540			1550			1560			1570			1580		
AAG TTC K	GAG GTC E																			

Figure 2B



[illegible]

Figure 2D

000110-00210200

CAA CCC CCC CTG GAG CAG AGC GAG AAG GCG TTG AGG CAG CAG CAG GTG GAG AAG GAC TCC CAG					
GTT GCG GCG GAC CTC GTC TCG CTC TTC GCG AAC TCG GTC GTC GTC CAG GTC TTC CTG AGG GTC					
Q A R L E Q T S E R L R Q Q Q V E K D S Q>					
3600	3610	3620	3630	3640	3650
AAC AAG AGC AAC AAT GCG AGC CTG AAT CTG GTG GAG GAG GAG GTC GCG GCG GAC CAC CCC CCC					
TAG TTC TCG TAG TAA CCG TCC GAC TAC TAC GAC CAC CTC CTC CTC GAC GCG GCG CTC GTG GCG GCG					
T K S L T G R L M L V L E E L R R D H P A>					
3660	3670	3680	3690	3700	3710
ATG GGT GAG CCG CTG CCG GAA GCG AAG AAG AGC CTG CTC GAC GGT CAG AGA GCG ACG TTC CCC					
TAC CGA CTC GCG GAC GGA GGT GCG TTC TTC GAG GAG CTC GAG CTC TCT CCC TCG AAG GCG					
H A E P L P E P K K L L L A Q R G S F P>					
3720	3730	3740	3750	3760	3770
CGT TCG CTC CAA CAA ACC GCG GTG TGA TCG TCG CCC CAC GTC GGA AGC GCG TCG CCC CCC CAG					
GGA ACC CAG GTC GTT GTT TCG GCG CAC ACT GCG ACC GCG GTC GAA GGT TCG ACC GCG GCG GCG					
P W V Q Q T R V R W P H L G T A W P P Q>					
3780	3790	3800	3810	3820	3830
CGC CAC CCG CAC CCG GCG GCG TCG AGA TGA CAG AGA AGC GCG AGT TCG GGA AGA CCC CAG ACC					
GCG CTG GCG GCG GCG GCG AGC GCG GCG GCG GCG GCG GCG GCG GCG GCG GCG GCG GCG GCG GCG					
P H P P H P G C H S Q T A S E COT TGT GCG GCG GCG GCG GCG GCG GCG GCG GCG GCG					
3840	3850	3860	3870	3880	3890
ACT AGC CCA CCG AGC AAT ACA GAC CTG CTG GCG TGT GCA CCG TAC CCG GCG CCA CCG AGC GTC					
TGA TGC GGT GCG TCG TAG TGT CTC GAG GAA GCG GCG GCG GCG GCG GCG GCG GCG GCG GCG GCG					
T S P D S L T D L L P C A P Y F G GGT GCG GCG GCG GCG GCG GCG GCG GCG GCG GCG					
3900	3910	3920	3930	3940	3950
ACA GAC CTG CTT CCC AGT GCA CCG GAC CCG GCA AGA TGA CCA ACC ACC AGC ACT GGA GTC CAC					
TGT CTG GAG GAA GCG TGA GCG GCG GCG GCG GCG GCG GCG GCG GCG GCG GCG GCG GCG GCG					
T D L L P S A P D P G S T S P T T T R T G					
3960	3970	3980	3990	4000	4010
CAA GCG ACA GCG GGA CTG TCG GCG TGA AGC GGT GGT TCG GCG GCG GCG GCG GCG GCG GCG GCG					
GTT GCG TGT CCG GGT AAC ACA GCG AAC TCG GGA GGA ACC GCG TCG GGA GAC GAC TCG GGT GAC					
Q G T A G L S P L T P P W G T H L S T TCG GGT GAC					
4020	4030	4040	4050	4060	4070
CTG CAC TCG AGC AGC CAC ACT GCG ACC CTC AGC TCG GCG CTG ACC CCA GGA CAC CAC CTA CCC					
GAG GTA ACC TCC TCC CTC TCA CCG TCG GAG TCG ACC GGA GAG GGT CCG CCG CCG CCG CCG CCG					
L H S R R E S G T L S Q P L T P G T P G H H L P>					
4080	4090	4100	4110	4120	4130
CTG CAC TCG AGC AGC CAC ACT GCG ACC CTC AGC TCG GCG CTG ACC CCA GGA CAC CAC CTA CCC					
GAG GTA ACC TCC TCC CTC TCA CCG TCG GAG TCG ACC GGA GAG GGT CCG CCG CCG CCG CCG CCG					
H T D P F T L G C Y P H P>					

Figure 2E

Sequence Range: 1 to 398

10	20	30	40	50	60
TAA GGA GAG AAT GAG GTG GCG GAA GGA GCG CAT TTG GAA TTT GGT GCG GAG GAA GCG GCG GTG	70	80	90	100	110
ATG GCG	120	130	140	150	160
AGC GCG	170	180	190	200	210
ATG GCG	220	230	240	250	260
ATG GCG	270	280	290	300	310
ATG GCG	320	330	340	350	360
ATG GCG	370	380	390	400	410
ATG GCG	420	430	440	450	460
ATG GCG	470	480	490	500	510
ATG GCG	520	530	540	550	560
ATG GCG	570	580	590	600	610
ATG GCG	620	630	640	650	660
ATG GCG GCG GCG GCG GCG GCG GCG GCG GCG GCG GCG GCG GCG GCG GCG GCG LCG GCG GCG GCG GCG	670	680	690	700	710
ATG GCG	720	730	740	750	760
ATG GCG GCG GCG GCG GCG GCG GCG GCG GCG GCG GCG GCG GCG GCG GCG GCG LCG GCG GCG GCG GCG	770	780	790	800	810
ATG GCG GCG GCG GCG GCG GCG GCG GCG GCG GCG GCG GCG GCG GCG GCG LCG GCG GCG GCG GCG GCG	820	830	840	850	860
ATG GCG GCG GCG GCG GCG GCG GCG GCG GCG GCG GCG GCG GCG GCG GCG LCG GCG GCG GCG GCG GCG	870	880	890	900	910
ATG GCG GCG GCG GCG GCG GCG GCG GCG GCG GCG GCG GCG GCG GCG GCG LCG GCG GCG GCG GCG GCG	920	930	940	950	960
ATG GCG GCG GCG GCG GCG GCG GCG GCG GCG GCG GCG GCG GCG GCG GCG LCG GCG GCG GCG GCG GCG	970	980	990	1000	1010

Figure 3A

890			900			910			920			930			940		
CAG	ACA	ATG	AGT	ATG	ATG	ATG	ATG	ATG	ATG	ATG	ATG	ATG	ATG	ATG	ATG	ATG	
CTG	CTG	CTG	CTG	CTG	CTG	CTG	CTG	CTG	CTG	CTG	CTG	CTG	CTG	CTG	CTG	CTG	
Q	T	H	G	L	P	H	E	L	V	X	B	P	A	S	T	N	
950			960			970			980			990			1000		
TAC	CGC	ATG	CTG	CTG	CTG	CTG	CTG	CTG	CTG	CTG	CTG	CTG	CTG	CTG	CTG	CTG	
ATG	CTG	CTG	CTG	CTG	CTG	CTG	CTG	CTG	CTG	CTG	CTG	CTG	CTG	CTG	CTG	CTG	
Y	R	H	L	C	A	V	L	H	P	A	L	N	V	X	G	K	
1010			1020			1030			1040			1050			1060		
ACT	CTG	CTG	CTG	CTG	CTG	CTG	CTG	CTG	CTG	CTG	CTG	CTG	CTG	CTG	CTG	CTG	
CTG	CTG	CTG	CTG	CTG	CTG	CTG	CTG	CTG	CTG	CTG	CTG	CTG	CTG	CTG	CTG	CTG	
S	C	L	V	H	L	Q	H	T	G	X	A	K	D	F	L	G	
1080			1090			1100			1110			1120			1130		
ATG	CTG	CTG	CTG	CTG	CTG	CTG	CTG	CTG	CTG	CTG	CTG	CTG	CTG	CTG	CTG	CTG	
CTG	CTG	CTG	CTG	CTG	CTG	CTG	CTG	CTG	CTG	CTG	CTG	CTG	CTG	CTG	CTG	CTG	
M	S	E	V	D	F	M	E	S	H	L	L	L	P	E	N	L	
1140			1150			1160			1170			1180			1190		
ACT	CTG	CTG	CTG	CTG	CTG	CTG	CTG	CTG	CTG	CTG	CTG	CTG	CTG	CTG	CTG	CTG	
CTG	CTG	CTG	CTG	CTG	CTG	CTG	CTG	CTG	CTG	CTG	CTG	CTG	CTG	CTG	CTG	CTG	
T	K	A	L	E	H	M	R	L	L	G	Q	K	V	L	K	D	
1200			1210			1220			1230			1240			1250		
GAG	CTG	CTG	CTG	CTG	CTG	CTG	CTG	CTG	CTG	CTG	CTG	CTG	CTG	CTG	CTG	CTG	
CTG	CTG	CTG	CTG	CTG	CTG	CTG	CTG	CTG	CTG	CTG	CTG	CTG	CTG	CTG	CTG	CTG	
E	F	L	R	A	L	Y	E	S	E	S	M	R	V	D	P	L	
1270			1280			1290			1300			1310			1320		
CTG	CTG	CTG	CTG	CTG	CTG	CTG	CTG	CTG	CTG	CTG	CTG	CTG	CTG	CTG	CTG	CTG	
CTG	CTG	CTG	CTG	CTG	CTG	CTG	CTG	CTG	CTG	CTG	CTG	CTG	CTG	CTG	CTG	CTG	
A	S	L	A	E	H	Q	A	V	H	M	C	C	E	L	L	C	
1330			1340			1350			1360			1370			1380		
CTG	CTG	CTG	CTG	CTG	CTG	CTG	CTG	CTG	CTG	CTG	CTG	CTG	CTG	CTG	CTG	CTG	
CTG	CTG	CTG	CTG	CTG	CTG	CTG	CTG	CTG	CTG	CTG	CTG	CTG	CTG	CTG	CTG	CTG	
V	V	N	S	H	C	V	F	P	R	E	L	X	E	V	F	A	
1390			1400			1410			1420			1430			1440		
CTG	CTG	CTG	CTG	CTG	CTG	CTG	CTG	CTG	CTG	CTG	CTG	CTG	CTG	CTG	CTG	CTG	
CTG	CTG	CTG	CTG	CTG	CTG	CTG	CTG	CTG	CTG	CTG	CTG	CTG	CTG	CTG	CTG	CTG	
R	C	A	K	R	G	R	E	D	L	A	D	R	L	L	S	A	
1460			1470			1480			1490			1500					

Figure 3B

[illegible]

Figure 3C

[illegible]

Figure 3D

3600 3610 3620 3630 3640 3650  
 3660 3670 3680 3690 3700 3710  
 3720 3730 3740 3750 3760 3770 3780  
 3790 3800 3810 3820 3830 3840  
 3850 3860 3870 3880 3890 3900  
 3910 3920 3930 3940 3950 3960  
 3970 3980 3990

Figure 3E

五、六、七、八、九、十、十一、十二、十三、十四、十五、十六、十七、十八、十九、二十、二十一、二十二、二十三、二十四、二十五、二十六、二十七、二十八、二十九、三十、三十一、三十二、三十三、三十四、三十五、三十六、三十七、三十八、三十九、四十、四十一、四十二、四十三、四十四、四十五、四十六、四十七、四十八、四十九、五十、五十一、五十二、五十三、五十四、五十五、五十六、五十七、五十八、五十九、六十、六十一、六十二、六十三、六十四、六十五、六十六、六十七、六十八、六十九、七十、七十一、七十二、七十三、七十四、七十五、七十六、七十七、七十八、七十九、八十、八十一、八十二、八十三、八十四、八十五、八十六、八十七、八十八、八十九、九十、九十一、九十二、九十三、九十四、九十五、九十六、九十七、九十八、九十九、一百。

1 72 190 266 502 1135

PH C2 GAP QTRV

Figure 4B

Figure 4C

## Pleckstrin Homology(PH) Domain Alignment

SynGAP-a	162	FKESHSHESL	LSPSSAA...	.....EAELEL	NLD.....	.....EDSIHK	19
Hs p120	471	FYKNIVKKG	YLKKGK...	..KRWNLYF	ILEGSDAQLI	YFESEKRATK	51
Dm GAP1	759	PVLLKEGEGL	MTKYPTSRKR	FGRQFKQRHF	RLTT..HSL	YAKSK..GKQ	80
Hs Plec	1	MEPKRIREG	LVKKGSV...	.FNTWKPMWV	VLE..DGIE	FYKKK..SDNS	4

SynGAP-a	193	P.....	....VHSSIL	GQ.EFCFEVT	TSSGTKC...	..FACRSAAE	22
Hs p120	516	PKGLIDLSVC	SVYVVHDSLF	GR.PNCFQIV	VQHFSEEHYI	FYFAGETPEQ	56
Dm GAP1	805	PICDIPLQEI	ASVEQLKDKS	FKMQNCFKIV	HNDRS.....	LIVQTTNCVE	84
Hs Plec	45	PKGMIPLKGS	TLTSPCQDFG	KR.MFVFKIT	TTKQQ....D	HFFQAALFEZ	8

SynGAP-a	224	RDKWIEQLQ	AVKPNKDNSR	243
Hs p120	565	AEDWMKGLQ	FCNLRKSSPG	584
Dm GAP1	850	EREWFLLHK	ICLMNSIRMQ	869
Hs Plec	89	RDWVRDINK	AIKCIEGGQK	108

Figure 5

## C2 Domain Alignment

SynGAP-a	245	..VDNVLKLW	..IIEARELP	....PKKRY.	YCELCL....	DDMLYARTTS	281
Hs p120	592	..QVSSLVLH	..IEEAHKLP	...VKHFTNP	YCNIYL....	NSVQVAKTH.	629
Rn Syt II	151	DYDFQANQLT	VGVLQAAELP	ALDMGGTSDP	YVKVFLLPD.	.KKKKYETKV	198
Bt Rab 3A	411	LYDQDNSSLH	CTIHKAKGLK	PMDSNGLADP	YVKLHLLPGA	SKSNKLRTKT	460

SynGAP-a	282	KPRSASGDTV	FWGHHFEFNN	LP.AVRALRL	HLYRD.SDKK	RKKDKAGYVG	329
Hs p120	630	...AREGQNP	VWSEEFVPDD	LPPDINRFEI	TL....SNKT	.KKSKDPDIL	671
Rn Syt II	199	...HRKTLNP	AFNETFTFKV	..PYQELGGK	TLVMAIYDFD	RF.SKHDIIG	242
Bt Rab 3A	461	...LRNTRNP	IWNETLVYHG	I.TDEDMQPK	TLRISVCDED	KF.GHNEFIG	505

SynGAP-a	330	LVTVPVAT..	.....	.LAGRHFEQ	WY.PVT.LPT	354
Hs p120	672	FMRCQLSR..	.....	.LQKGHATDE	WFLSSSHIPL	698
Rn Syt II	243	EVKVPMTVD	.....	.L..GQPIEE	WRDLQG..G.	266
Bt Rab 3A	506	ETRFSCLKLK	PNQRK.NFNI	CL..ERVIPM	KRAGTTGSAR	542

Figure 6

Figure 7A

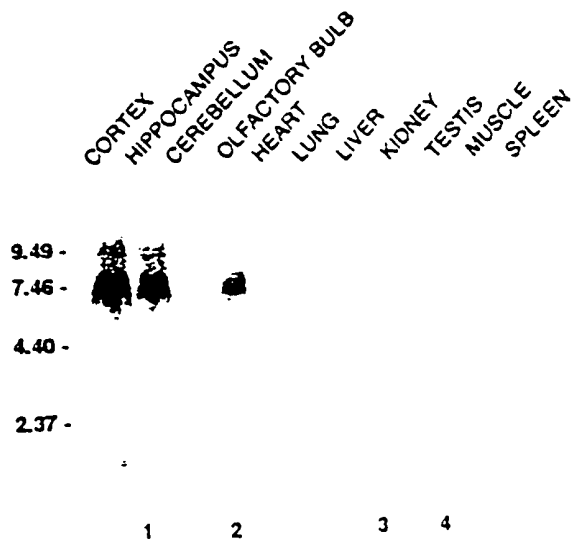


Figure 7B



Figure 7C

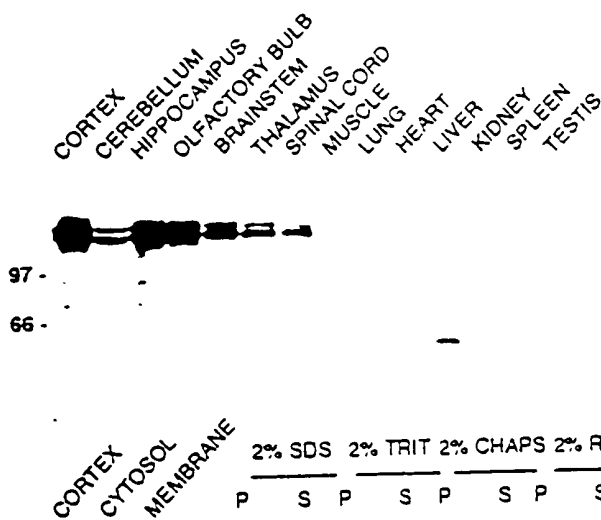
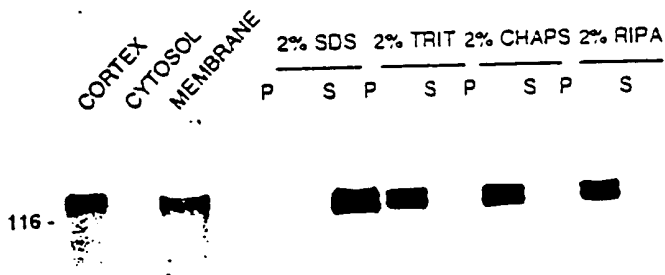


Figure 7D



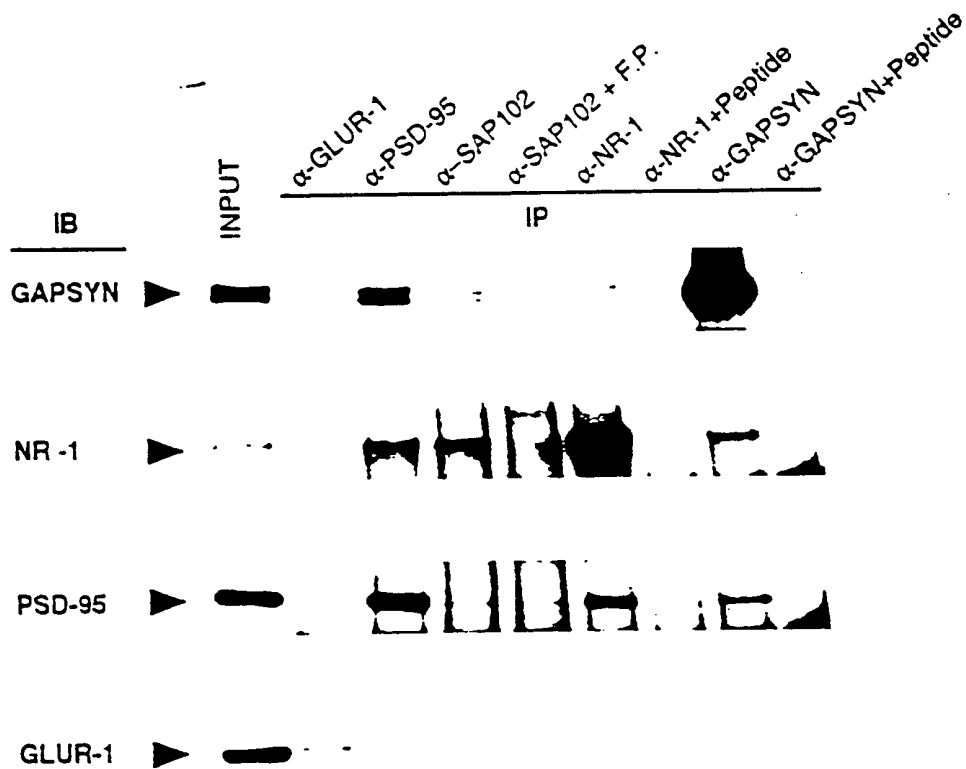


Figure 8

100

Figure 9A

Figure 9B

[illegible]

Figure 9C

Figure 9D

[illegible]

Figure 9E

[illegible]

Figure 9F

[illegible]



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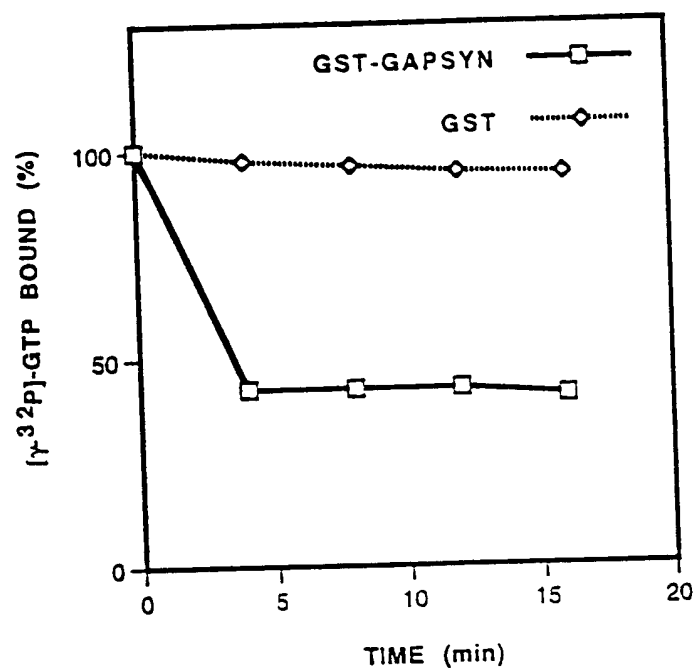


Figure 11